REMARKS

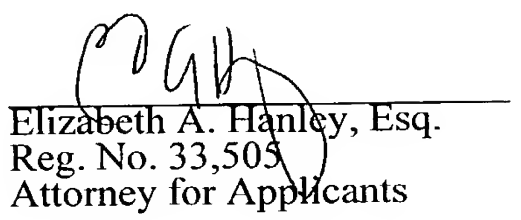
Preliminary to examination of this application, Applicants cancel claims 1-12 and add claims 13-21. The foregoing cancellations and amendments are not related to issues of patentability, and introduce no new matter. Applicants submit herewith a "Version with Markings to Show Changes Made," which indicates the specific amendments made to the specification and the claims. For the Examiner's convenience the currently pending claims are set forth in Appendix A. Entry of the foregoing Preliminary Amendment is respectfully in order and requested.

CONCLUSION

In view of the amendments and remarks set forth above, it is respectfully submitted that this application is in condition for allowance. If there are any remaining issues or the Examiner believes that a telephone conversation with Applicants' Agent would be helpful in expediting prosecution of this application, the Examiner is invited to call the undersigned at (617) 227-7400.

Respectfully submitted,

LAHIVE & COCKFIELD, LLP



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Date: **December 21, 2001**

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Canceled Claims:

~~1. **(Canceled)** Method for diagnosis of autoimmune diseases of the GSE type or associated with gluten sensitive enteropathy comprising taking a sample and testing the sample for antibodies against human tissue transglutaminase and at least one other transglutaminase molecule.~~

~~2. **(Canceled)** Method as claimed in claim 1, wherein the autoimmune disease is dermatitis herpetiformis, morbus Duhring.~~

~~3. **(Canceled)** Method as claimed in claim 1, wherein the autoimmune disease is selected from Addison's disease, AI haemolytic anaemia, AI thrombocytopenic purpura, AI thyroid diseases, atrophic gastritis – pernicious anaemia, Crohn's disease, colitis ulcerosa, Goodpasture syndrome, IgA nephropathy or IgA glomerulonephritis, myasthenia gravis, partial lipodystrophy, polymyositis, primary biliary cirrhosis, primary sclerosing cholangitis, progressive systemic sclerosis, recurrent pericarditis, relapsing polychondritis, rheumatoid arthritis, rheumatism, sarcoidosis, Sjögren's syndrome, SLE, splenic atrophy, type I (insulin-dependent) diabetes mellitus, diabetis mellitus of other types, Wegener granulomatosis, ulcerative colitis, vasculitis (both systemic and cutaneous), or vitiligo.~~

~~4. **(Canceled)** Method as claimed in claim1, wherein the autoimmune disease is associated with infertility, increased risk of abortion, reduced foetal growth.~~

~~5. **(Canceled)** Comparative protein binding assay for a differential diagnosis of autoimmune diseases comprising the detection of antibodies against transglutaminase, charcterised in that the protein binding assay comprises recombinant human tissue transglutaminase as antigen.~~

~~6. **(Canceled)** Comparative protein binding assay as claimed in claim 5, further comprising tissue-specific transglutaminase as antigen.~~

~~7. **(Canceled)** Comparative protein binding assay as claimed in claim 6, wherein the transglutaminase is selected from FXIIIA, TGk, Tge, TGx, and band 4.2.~~

~~8. **(Canceled)** Comparative protein binding assay as claimed in any preceding claim 5 or 6, further comprising any other transglutaminase as antigen.~~

[redacted]

~~9. **(Canceled)** Comparative protein binding assay as claimed in claim 8, comprising transglutaminase from different species.~~

~~10. **(Canceled)** Comparative protein binding assay as claimed in claim 8, wherein the transglutaminase is a recombinant fusion protein or fragment thereof.~~

~~11. **(Canceled)** Comparative protein binding assay as claimed in any preceding claim 5 to 10, wherein the binding assay is an immunoassay selected from RIA, EIA/ELISA, LiA and FiA.~~

~~12. **(Canceled)** Comparative protein binding assay as claimed in any preceding claim 5 to 11, wherein the binding assay is a sandwich-immunoassay selected from IRMA, IEMA/ EUA, ILMA (immunoluminescence assay and IFMA (immunofluorescence assay).~~

New Claims:

13. **(New)** Method for differential diagnosis of autoimmune diseases of the GSE-type or associated with gluten sensitive enteropathy comprising taking a sample and testing the sample for antibodies against human tissue transglutaminase and at least one other transglutaminase molecule selected from FXIIIA, TGK, TGx, Tge and Band 4.2.

14. **(New)** Method as claimed in 13, wherein the auto immune disease's dermatitis herpetiformis, or morbus Duhring.

15. **(New)** Method as claimed in claim 13, wherein the autoimmune disease is selected from Addison's disease, AI haemolytic anaemia, AI thrombocytopenic purpura, AI thyroid diseases, atrophic gastritis – pernicious anaemia, Crohn's disease, colitis ulcerosa, Goodpasture syndrome, IgA nephropathy or IgA glomerulonephritis, myasthenia gravis, partial lipodystrophy, polymyositis, primary biliary cirrhosis, primary sclerosing cholangitis, progressive systemic sclerosis, recurrent pericarditis, relapsing polychondritis, rheumatoid arthritis, rheumatism, sarcoidosis, Sjögren's syndrome, SLE, splenic atrophy, type I (insulin-dependent) diabetes mellitus, diabetis mellitus of other types, Wegener granulomatosis, ulcerative colitis, vasculitis (both systemic and cutaneous), or vitiligo.

16. **(New)** Method as claimed in claim 13, wherein the autoimmune disease is associated with infertility, increased risk or abortions or reduced fetal growth.

17. **(New)** Comparative protein binding assay for differential diagnosis of autoimmune diseases comprising the detection of antibodies against transglutaminase, characterized in that the protein binding assay comprises at

least tow different transglutaminase antigens selected from tissue transglutaminase (TGc), TGk, Tge, TGx, FXIIIA and Band 4.2.

18. **(New)** Comparative protein binding assay as claimed in claim 17, comprising transglutaminase from different species.

19. **(New)** Comparative protein binding assay as claimed in any preceding claims 17 to 18 wherein the transglutaminase antigen is a recombinant fusion protein or fragment thereof.

20. **(New)** Comparative protein bindings assay as claimed in any preceding claims 17 to 19, wherein the binding assay is an immunoassay selected from RIA,EIA/ELISA, LiA and FiA.

21. **(New)** Comparative protein binding assay as claimed in any preceding claims 17 to 20, wherein the binding assay is a sandwich-immunoassay selected from IRMA, IEMA/EUA, ILMA (immunoluminescence assay) and IFMA (immunofluorescence assay).

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APPENDIX A

13. Method for differential diagnosis of autoimmune diseases of the GSE-type or associated with gluten sensitive enteropathy comprising taking a sample and testing the sample for antibodies against human tissue transglutaminase and at least one other transglutaminase molecule selected from FXIIIA, TGK, TGx, Tge and Band 4.2.

14. Method as claimed in 13, wherein the auto immune disease's dermatitis herpetiformis, or morbus Duhring.

15. Method as claimed in claim 13, wherein the autoimmune disease is selected from Addison's disease, AI haemolytic anaemia, AI thrombocytopenic purpura, AI thyroid diseases, atrophic gastritis – pernicious anaemia, Crohn's disease, colitis ulcerosa, Goodpasture syndrome, IgA nephropathy or IgA glomerulonephritis, myasthenia gravis, partial lipodystrophy, polymyositis, primary biliary cirrhosis, primary sclerosing cholangitis, progressive systemic sclerosis, recurrent pericarditis, relapsing polychondritis, rheumatoid arthritis, rheumatism, sarcoidosis, Sjögren's syndrome, SLE, splenic atrophy, type I (insulin-dependent) diabetes mellitus, diabetis mellitus of other types, Wegener granulomatosis, ulcerative colitis, vasculitis (both systemic and cutaneous), or vitiligo.

16. Method as claimed in claim 13, wherein the autoimmune disease is associated with infertility, increased risk or abortions or reduced fetal growth.

17. Comparative protein binding assay for differential diagnosis of autoimmune diseases comprising the detection of antibodies against transglutaminase, characterized in that the protein binding assay comprises at least tow different transglutaminase antigens selected from tissue transglutaminase (TGc), TGk, Tge, TGx, FXIIIA and Band 4.2.

18. Comparative protein binding assay as claimed in claim 17, comprising transglutaminase from different species.

19. Comparative protein binding assay as claimed in any preceding claims 17 to 18 wherein the transglutaminase antigen is a recombinant fusion protein or fragment thereof.

20. Comparative protein bindings assay as claimed in any preceding claims 17 to 19, wherein the binding assay is an immunoassay selected from RIA,EIA/ELISA, LiA and FiA.

[redacted]

21. Comparative protein binding assay as claimed in any preceding claims 17 to 20, wherein the binding assay is a sandwich-immunoassay selected from IRMA, IEMA/EUA, ILMA (immunoluminescence assay) and IFMA (immunofluorescence assay).

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